

### **AMENDMENT TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

#### **Listing of Claims:**

1. (Currently Amended) A method for data recovery in a disk drive system wherein the disk drive system includes a data disk drive and a disk drive controller, comprising the steps of:

reading data from the data disk drive;

generating an error detection and correction code from the data read from the data disk drive; and

in parallel with the reading of the data from the data disk drive and the generating an error detection and correction code from the data read from the data disk drive, reading error detection and correction code metadata;

comparing the generated error detection and correction code of the read data with the error detection and correction code stored as metadata;

determining data validity of data read from the data disk drive based on the comparison of error detection and correction code metadata and the generated error detection and correction code; and

debugging the system via implementation of an associated volume logical block address range included with at least one of the read data, the generated error detection and correction code and the error detection and correction code stored as metadata,

wherein the error detection and correction code metadata is stored in a disk drive separate from the data read from the data disk drive,

wherein the error detection and correction code is a cyclic redundancy check,

wherein the error detection and correction code of the read data and the error detection and correction code stored as metadata allow for verification of data path integrity at a byte level and detection of drive anomalies at a byte level,

wherein the cyclic redundancy check is generated and managed at a sector level.

2. (Cancelled)
3. (Previously Presented) The method of Claim 1, if the generated error detection and correction code of the read data matches the error detection and correction code stored as metadata, then accepting the data read from the data disk drive as valid data.
4. (Previously Presented) The method of Claim 1, if the generated error detection and correction code of the read data does not match the error detection and correction code stored as metadata, then reconstructing data from parity data.
5. (Original) The method of Claim 4, further comprising generating an error detection and correction code for the reconstructed data.
6. (Previously Presented) The method of Claim 5, further comprising comparing the error detection and correction code stored as metadata with the generated error detection and correction code for the reconstructed data.
7. (Original) The method of Claim 6, if the error detection and correction code stored as metadata matches the reconstructed data error detection and correction code, then accepting the reconstructed data as valid data.
8. (Original) The method of Claim 6, if the error detection and correction code stored as metadata does not match the reconstructed data error detection and correction code, then accepting the data read from the data drive as valid data.
9. (Cancelled)
10. (Original) The method of Claim 1, wherein the size of the error detection and correction code metadata is a data block.

11. (Previously Presented) The method of Claim 1, wherein the size of the error detection and correction code metadata is 4 bytes per 512 bytes of data read from the data disk drives.

12. (Cancelled)

13. (Previously Presented) The method of Claim 4, wherein the error detection and correction code metadata, the parity data, and the data read from the data disk drives are all stored on separate disk drives.

14-22. (Cancelled)

23. (Currently Amended) A method of disk drive data detection and recovery, comprising:  
reading error detection and correction code metadata associated with data read from a data disk drive;  
generating error detection and correction code for the data;  
determining data validity of data read from the data disk drive based on the error detection and correction code metadata and the generated error detection and correction code; and

debugging via implementation of an associated volume logical block address range included with at least one of the read data, the generated error detection and correction code and the error detection and correction code stored as metadata,

wherein the error detection and correction code metadata is stored in a disk drive separate from the data disk drive,

wherein the error detection and correction code is cyclic redundancy check,

wherein the error detection and correction code metadata and the generated error detection and correction code allow for verification of data path integrity at a byte level and detection of drive anomalies at a byte level,

wherein the cyclic redundancy check is generated and managed at a sector level.

24. (Cancelled)

25. (Previously Presented) The method of Claim 23, wherein the error detection and correction code metadata is compared against the generated error detection and correction code from the data read from the data disk drive.

26. (Original) The method of Claim 23, wherein the error detection and correction code metadata is compared against an error detection and correction code generated from data reconstructed using parity data.

27. (Previously Presented) The method of Claim 23, wherein, if the error detection and correction code metadata equals the error detection and correction code generated from the data disk drive or if the error detection and correction code metadata does not equal the error detection and correction code generated from data reconstructed from parity, then accepting the data read from the data disk drive as valid.

28. (Original) The method of Claim 23, wherein, if the error detection and correction code metadata equals the error detection and correction code generated from data reconstructed from parity, then accepting the data reconstructed from parity as valid.

29-31. (Cancelled)